

Science:

An Annotated Bibliography

A selected listing of titles available on this topic from the
Early Childhood Training Center's Media Center



Early Childhood Training Center

The Early Childhood Training Center is located at
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Web Site: <http://www.education.ne.gov/oec/ectc.html>

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Books

Blocks and Beyond: Strengthening Early Math and Science Skills Through Spatial Learning. Mary Jo Pollman. (2010). Baltimore, MD: Brookes. Teach spatial skills to young children, and improve their overall academic outcomes. This innovative teaching resource has the research-based insights and practical activities early childhood educators need to promote spatial development throughout the school day.

Bubbles, Rainbows, and Worms: Science Experiments for Preschool Children. Sam Ed Brown. (2004). Beltsville, MD: Gryphon House. With age-appropriate activities and up-to-date science information, this book contains easy experiments with plants, the environment, air, water, and the senses. Each activity answers the questions: Why did that happen? Why does it work that way? What will happen if...? Children can plant their own garden, make clouds, or hunt for animals and insects as they explore basic scientific principles.

The Creative Curriculum for Preschool, Volume 2: Interest Areas. Diane Trister Dodge. (2010). Washington, DC: Teaching Strategies. This volume discusses the ten classroom interest areas and the outdoors, suggesting appropriate materials and presenting teachers with ways to promote children's development and learning.

The Creative Curriculum for Preschool, Volume 5: Objectives for Development and Learning. Cate Heroman. (2010). Washington, DC: Teaching Strategies. This volume presents the 38 objectives for development and learning; user-friendly, color-coded developmental progressions that show widely-held expectations for children; and strategies to help every child progress.

Educating Young Children: Active Learning Practices for Preschool and Child Care Programs. Mary Hohmann. (2008). Ypsilanti, MI: HighScope Educational Research Foundation. This book presents a comprehensive, up-to-date description of the HighScope Curriculum, a model for developing high-quality early childhood programs that encourage and support children's initiatives and active learning experiences.

Exploring Water with Young Children. Ingrid Chalufour. (2005). St. Paul, MN: Redleaf Press. *Exploring Water with Young Children* focuses children's explorations to help deepen their understanding of water and its properties, including concepts related to water's flow, appearance, and effect on objects. This field-tested curriculum helps teachers promote children's natural curiosity about water, as well as their use of inquiry. Also see the trainer's guide and DVD by the same title.

How Students Learn: History, Mathematics, and Science in the Classroom. Suzanne Donovan (Ed.). (2005). Washington, DC: National Academy Press. *How Students Learn* offers a highly useful blend of principle and practice. It will be important not only to teachers, administrators, curriculum designers, and teacher educators, but also to parents and the larger community concerned about children's education.

Incredible Edible Science: Recipes for Developing Science and Literacy Skills. Liz Plaster. (2010). St. Paul, MN: Redleaf Press. Make learning exciting for children with over 160 hands-on, food-based

science activities, each with a strong literacy connection. *Incredible Edible Science* provides everything needed to teach important science process skills in a safe, developmentally appropriate way. These cross-curricular activities promote brain development and fully engage children through physical involvement, such as exploring balance and texture as they create popcorn ball structures, classifying and patterning different types of cereal, and investigating fractions with biscuits and participation in literacy and language components such as phonemic awareness, vocabulary development, and following directions.

Math and Science for Young Children, 4th Edition. Rosalind Charlesworth. (2003). Clifton Park, NY: Delmar. This 4th edition focuses on the integration of mathematics and science with other subject areas for children from birth through age eight. Based on established theories of child development and learning, this book is compatible with guidelines and standards of many national professional organizations. Mathematics and science concepts are related to national standards and present a common framework for integration with music and movement, language arts, visual arts, science, and social studies activities. Problem solving is emphasized as the means for constructing concepts using a balance of naturalistic, informal, and structured activities and experiences.

Picture Science: Using Digital Photography to Teach Young Children. Carla Newmann-Hinds. (2007). St. Paul, MN: Redleaf Press. *Picture Science* shows how to use digital photography to make each step in the scientific process—from posing a question, to gathering data, to showing your findings—concrete fun for children.

Reaching Standards and Beyond in Kindergarten: Nurturing Children's Sense of Wonder and Joy in Learning. Gera Jacobs. (2010). Thousand Oaks, CA: Corwin/Sage. Standards provide important benchmarks for student learning, but meeting them doesn't mean you have to take away creativity, lively participation, and joyful learning. This resource offers research-based and field-tested strategies to address content standards in ways that nurture kindergartners' natural love of learning. The authors show how projects, play, and other engaging learning experiences can help children reach standards in literacy, mathematics, science, social studies, and the arts. Also covers the transitions to and from kindergarten. Co-published with the National Association for the Education of Young Children

Real Science in Preschool: Here, There, and Everywhere, Teacher's Idea Book Series. Polly Neill. (2008). Ypsilanti, MI: HighScope Educational Research Foundation. This book shows you how authentic, hands-on science learning takes place every day throughout the classroom as well as outdoors. Introductory chapters provide an overview of early science learning and supportive adult-child interactions, while later chapters take you on a tour of classroom interest areas to find the science learning going on there and to consider strategies and materials that encourage children's ideas. Also includes information on creating science-related group-time activities based on children's interests and templates for developing your own group-time activities.

Science Activities A to Z. Joanna Matricardi. (2005). Clifton Park, NY: Thomson Delmar Learning. Each section in this book helps teachers and parents find science activities for a theme-based curriculum incorporating a letter of the week. A theme-specific index and science-concept index make it easy to find just the right activities for each lesson.

Science Experiences for the Early Childhood Years: An Integrated Affective Approach. Jean D. Harlan. (2004). Upper Saddle River, NJ: Pearson. The new edition of this popular book again gathers all of the elements necessary to help prospective teachers learn to inspire children to care about their world and how it works, enjoy investigating it, and remember with pride what their investigations uncover. These authors clearly demonstrate that to be effective, science teaching must engage children not just physically, intellectually, and socially; but, emotionally, as well. They show how providing achievable goals and appropriate guidance sparks children's natural interest in what things do, how things work, and why things happen the way they do. The book's multi-model approach works with a variety of learning styles. It connects science activities with the rest of the early childhood curriculum: math, literature, music, art, etc., and places science in the context of today's children's lives within the family and the community. Increased coverage of neuroscience expands discussion of the complex interactions between emotions, memory, and thought processes.

Spotlight on Young Children and Science. Derry Koralek (Ed.) (2004). Washington, DC: National Association for the Education of Young Children. In this collection of articles from *Young Children* and other NAEYC resources, the authors describe fresh, effective ideas for early childhood science and help us think carefully about the *what* and the *how* in a first-rate science program.

DVDs

Better Kid Care: Science for Young Thinkers. You don't have to be a rocket scientist to help future scientists learn the basics. Find out how to make science activities really fun for children and adults. Produced and distributed by the Better Kid Care program at Pennsylvania State University. 75 minutes, 2008.

Exploring Water with Young Children. A training companion to both the curriculum and trainer's guide, this DVD contains real-life vignettes of this complete curriculum in action in the classroom. Produced and distributed by Redleaf Press, St. Paul, MN. 38 minutes, 2003.

Independent Study Kits

Early Learning Guidelines, Science Independent Study with DVD, Volume 1: Awareness. Early Childhood Training Center. (2006). Omaha, NE: Author. This independent study kit provides the user with 2 hours of independent study credit. It includes a DVD entitled *The Whole Child, Program 13: Growing Minds*, a developmental wheel, a bound collection of articles on the topic of science, and the copy of the corresponding *Early Learning Guidelines* domain.

Early Learning Guidelines, Science Independent Study with DVD, Volume 2: Application. Early Childhood Training Center. (2007). Omaha, NE: Author. This independent study kit provides the user with 2 hours of independent study credit. It includes a DVD entitled *Discovering Nature with Young Children*, a book entitled *Science is Simple*, a bound collection of articles on the topic of science, and the copy of the corresponding *Early Learning Guidelines* domain. The contents of this kit are at the application level.

Early Learning Guidelines, Science Independent Study with Videotape, Volume 3: Refinement.

Early Childhood Training Center. (2006). Omaha, NE: Author. This independent study kit provides the user with 2 hours of independent study credit. It includes a DVD entitled *Discovering Science with Young Children*, a book entitled *The Sense of Wonder* by Rachel Carson, a bound collection of articles on the topic of science, and the copy of the corresponding *Early Learning Guidelines* domain.

Journals

The Early Childhood Training Center subscribes to the following journal titles, some issues of which include information on science for young children.

Early Childhood Today is published eight times per year by Scholastic, Inc. Each issue includes a list of conferences for early childhood professionals and a column of recommended children's books. Other topics include classroom issues, administration, family communication, and child development.

Exchange, The Early Childhood Training Center subscribes to the following journal titles which include information on mathematics for young children.

The Reading Teacher, published by the International Reading Association, is a peer-reviewed professional journal, published eight times a year, that provides an open forum for the thoughtful consideration of practices, issues, and trends within the field of reading and literacy education and in related fields. The Reading Teacher aims to take a proactive stance toward the forces that are impinging on literacy education at the turn of the century: appraising and extending the profession, promoting literacy worldwide, embracing pluralism, transforming teaching, owning technology, and connecting with the community

Teaching Exceptional Children, published quarterly by the Council for Exceptional Children, is targeted for teachers of children with disabilities and children who are gifted. Articles deal with practical methods and materials for the classroom. While not research oriented, this journal welcomes those data-based descriptions which specify techniques, equipment, and procedures for teacher application with students with exceptionalities.

Young Children, published six times per year, is the official publication of the National Association for the Education of Young Children. The goal of NAEYC is to offer professional development opportunities to early childhood educators to improve the quality of services to children during the critical years of development from birth through age eight.